ALTERNATIVE ANTI-FOULING BOTTOM PAINTS WORKSHOP
SANTA BARBARA, AUGUST 24, 2004

Workshop Objectives

- Learn how copper pollution and alternative bottom paints may affect marine life and boating on the central California coast
- Learn how regulations may affect bottom paints
- Learn how nontoxic bottom paints performed in San Diego Bay, and;
- Learn and share information with a panel of experts

Panelists

1. Paul Brown - Port of San Diego Environmental Services
2. Bill Roberts – Shelter Island Boatyard
3. Marlan Hoffman – CA Professional Divers Association
4. Leslie Dobalian – RWQCB 9 (San Diego)
5. Peter von Langen – RWQCB 3 (San Luis Obispo)
6. Professor Dean Wendt – Cal Poly, SLO (Biological Sciences)
7. Frank Kelly – Santa Barbara Harbor Commissioner
8. Leigh Johnson – UC Sea Grant Program

Handouts:

- University of California Cooperative Extension. California Sea Grant College Program. October 2002. "Nontoxic Antifouling Strategies for Boats" – Booklet
- University of California Cooperative Extension. California Sea Grant College Program. November 2003. "Making Dollars and Sense of Nontoxic Antifouling Strategies for Boats" - Booklet
- University of California Cooperative Extension. California Sea Grant College Program. Mayo 2004. "Nontoxic Antifouling Strategies Demonstration Project" – Factsheet
- University of California Cooperative Extension. California Sea Grant College Program. Mayo 2004. "Nontoxic Antifouling Strategies Economic Incentives Studies" - Factsheet

http://seagrant.ucdavis.edu/publications.htm

Issues

- Governments in Southern CA are concerned about toxic buildup of copper in boat basins and are acting to reduce emissions of copper from boat paints.

- Fouling growth increases fuel consumption, increases "drag" (resistance to movement through the water) and boats with this problem may also carry invasive species of marine life.
- Popular antifouling strategies include: Copper-based paint (containing between 20 and 76% cuprous oxide) – continuously emit copper. Antifouling coatings – designed to release copper into surface waters through passive leaching – hard paints and ablation – soft paints.
- Non-toxic options: non-toxic bottom coatings epoxy-based, water-based, or polymer-based. These coating do not slow fouling growth and they need more frequent cleaning than copper-based paints.
- Epoxy coatings last longer (approx. 5 years); silicone coatings are slippery, need special handling; debris falls off at fast speed (approx 20 mph).
- Boats with non-toxic coatings need to be cleaned twice as often.
- Old, copper-based paint must be stripped from the hull before non-toxic bottom coatings can be applied.
- Data collected in 2002 (200 randomly selected San Diego recreational boat owners) showed that boaters are willing to pay approx. $700 for longer lasting paints; will pay $500 more for non-toxic coating than for a copper-based paints; didn't care whether a particular paint had a high or low copper content. In general, boaters want to keep the environment clean.
- The study on economic incentives for boat owners showed that due to boatyard capacity in San Diego Bay, the quickest time to phase out copper paints is 7 years at a cost of $20 million; considering the median paint stripping schedule of 15 years reported by 10 San Diego and Orange county boat repair yards, the least-cost policy to phase out copper paint is 10 to 15 years at a cost of $1 million.

Open Discussion

- Purpose of the California Professional Divers Association (CPDA). CPDA began in 1999 as a voluntary effort, currently the association has a 501 (c) 3 status. The Association works in Southern CA and in the Bay Area. The Association developed BMPs for underwater hull cleaning and has a certification program. The group was created as an incentive for divers of staying off regulations and saving costs in a long-term. For the CPDA, the most important thing is education.

- San Diego Bay Copper TMDL status. This TMDL is specific to Shelter Island Yacht Basin and Newport Bay. The purpose of this TMDL is to resolve problems of copper loading identified after several water quality studies developed in the area. The proposed draft was submitted to the Board in November 2003. In the draft it is proposed to have 2 years of education and 15 years of compliance to reduce the copper problem in Shelter Island. Currently, the San Diego RWQCB is receiving and responding public comments. Attendees were worried about how this TMDL will set a precedent for other areas in California and how marina operators will have to deal with the situation.

- Marina Industry status with respect to paints and future regulations for copper. What's out there? There is not a clear answer. There are several companies manufacturing alternatives but it's unlikely that anti-fouling bottom paints will be completely free of copper. There isn't a one size fits all solution. There are a lot of factors the industry needs to consider such as the type of boat, operational profile, the geographic area, hydraulics, among others.

- Professor Dean Wendt mentioned that his program is receiving money from the Office of Navy Research to research non-toxic "foul release" strategies. He thinks that the best candidates are silicone products (organisms attach to a non-toxic coating and are released by vessel movement – slippery). His group has tested new products but most have failed – boats have to go too fast to practically function. No practical options now.

- Pollutants are being created by changing paints. Ex VOCs so now dealing with air /water pollution trade-offs?

- Boatyard wash system regulations. Purpose to protect rain water/effluent quality. Boatyards require to capture and store rain water in San Diego prior to discharge to sewer system/treatment center. Use of filtration systems to remove solids.

- Attendees expressed concern about issues such as how to control boats that are not from the San Diego area (mobility) suing copper based paints and why to ban these paints regionally if they can be used in other parts of the state.

- RWQCB 3 is currently doing preliminary water quality data collection along the Central Coast.

- Status of the copper paints banning issue in other regions. The European Union is also concern about this copper issue. For example, along the east coast of Sweden, in the Netherlands, and in Denmark's freshwater areas, copper-based antifouling paints have been banned for use on recreational vessels. The European Union has asked the International Maritime Organization to ban all toxic boat bottom paints. Sweden, Finland and the United Kingdom are reviewing their antifouling practices with regard to copper pollution.